



November 22, 2013

LTR: BYRON 2013 -0149  
File: 1.10.0101

United States Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: Licensee Event Report (LER) 455-2013-003-00, "Unit 2 A-Train Diesel Generator Ventilation Fan Not Reset"

Byron Station, Unit 2  
Facility Operating License No. NPF-66  
NRC Docket No. STN 50-455

Enclosed is an LER concerning the Byron Station Unit 2 Emergency Diesel Generator credit for manual actions that occurred on August 17, 2011. This condition is reportable to the NRC in accordance with 10 CFR 50.73(a)(2)(iv)(B) – Any Operation or Condition Prohibited by the Plant Technical Specifications.

Should you have any questions concerning this submittal, please contact Mr. Steven Gackstetter, Regulatory Assurance Manager, at (815) 406-2800.

Respectfully,

A handwritten signature in black ink, appearing to read "F. Kearney", written over the printed name.

Faber A. Kearney  
Site Vice President  
Byron Station

FAK/GC/sg

Enclosure: LER 455-2013-003-00

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Byron Nuclear Power Station

<b>NRC FORM 366</b> (10-2010)		<b>U.S. NUCLEAR REGULATORY COMMISSION</b>		APPROVED BY OMB: NO. 3150-0104		EXPIRES: 10/31/2013					
<b>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)				Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to <a href="mailto:infocollects.resource@nrc.gov">infocollects.resource@nrc.gov</a> , and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.							
<b>1. FACILITY NAME</b> Byron Station, Unit 2				<b>2. DOCKET NUMBER</b> 05000455		<b>3. PAGE</b> 1 OF 3					
<b>4. TITLE</b> Unit 2 A-Train Diesel Generator Ventilation Fan not Reset											
<b>5. EVENT DATE</b>			<b>6. LER NUMBER</b>		<b>7. REPORT DATE</b>		<b>8. OTHER FACILITIES INVOLVED</b>				
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME		
08	15	2011	2013	- 003 - 00		11	25	2013	N/A	N/A	
									FACILITY NAME	DOCKET NUMBER	
									N/A	N/A	
<b>9. OPERATING MODE</b>  1		<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> <i>(Check all that apply)</i>									
<b>10. POWER LEVEL</b>  100		<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(vii)									
		<input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(A)									
		<input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(viii)(B)									
		<input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(ix)(A)									
		<input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(x)									
		<input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 73.71(a)(4)									
		<input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 73.71(a)(5)									
		<input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> OTHER									
<input type="checkbox"/> 20.2203(a)(2)(vi) <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) <input type="checkbox"/> 50.73(a)(2)(v)(D)											
Specify in Abstract below or in NRC Form 366A											
<b>12. LICENSEE CONTACT FOR THIS LER</b>											
FACILITY NAME Steven A Gackstetter – Manager, Byron Regulatory Assurance								TELEPHONE NUMBER <i>(Include Area Code)</i> (815) 406-2800			
<b>13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT</b>											
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX		
D	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A		
<b>14. SUPPLEMENTAL REPORT EXPECTED</b>						<b>15. EXPECTED SUBMISSION DATE</b>			MONTH	DAY	YEAR
<input type="checkbox"/> YES <i>(If yes, complete 15. EXPECTED SUBMISSION DATE)</i>						<input checked="" type="checkbox"/> NO					
<b>ABSTRACT</b> <i>(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)</i>											
<p>On September 26, 2013, it was identified that a previous condition had existed where the Unit 2, A-Train (2A), Diesel Generator (DG) Ventilation Fan did not automatically start in support of a DG surveillance.</p> <p>On August 15, 2011, with Byron Station Unit 2 operating in Mode 1 at 100 percent reactor power, the 2A DG Ventilation Fan was left in a condition that made it unable to automatically start on an emergency actuation. The error was discovered two days later during a routine scheduled DG surveillance. As a result, the 2A DG was discovered to have been inoperable for two days and the station did not perform the required Technical Specification surveillances for one DG inoperable. This condition resulted in a violation of Technical Specification 3.8.1, "AC Sources – Operating", Required Condition B, and is a reportable condition in accordance with 10 CFR 50.73 (a)(2)(i)(B) as any event or condition that was prohibited by Technical Specifications.</p> <p>The cause was that the Post Maintenance Test (PMT) work instructions did not identify the need to reset the High Differential Pressure (D/P) trip signal by placing the Ventilation Fan Control Switch in Pull-to-Lock (PTL) and did not validate that the ventilation fan would restart after a High D/P Trip.</p>											

U.S. NUCLEAR REGULATORY COMMISSION

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Byron Station, Unit 2	05000455	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2013	- 003	- 00	

**NARRATIVE**

**A. Plant Condition Prior to Event**

Event Date/Time: August 15, 2011 / 1815 hours CST

Unit 2 - Mode 1 - Power Operations, Reactor Power 100 percent

Reactor Coolant System [AB]: Normal operating temperature and pressure.

**B. Description of Event**

On September 26, 2013, with Byron Station Unit 2 operating in Mode 1 at 100 percent reactor power, it was identified that a previous condition existed where the Unit 2, A-Train (2A), Diesel Generator (DG) Ventilation Fan did not automatically start in support of a DG surveillance.

During the start of the semi-annual Engineering Safeguards Feature (ESF) Surveillance for the 2A DG on August 17, 2011, Equipment Operators (EOs) in the field identified that the 2A DG Ventilation Fan had failed to auto start. Upon failure of the fan to start, operators entered Technical Specification 3.8.1, "AC Sources - Operating", Condition B, for the 2A DG. Subsequently, the Reactor Operators took the Main Control Board (MCB) control switch for the ventilation fan to Pull-to-Lock (PTL) position and back to the After-Trip position and the fan started. The LCO was exited at 0958 on August 17, 2011.

The 2A DG Ventilation Fan circuitry had been modified on August 15, 2011 to install a time delay relay on the ventilation fan High Differential Pressure (D/P) trip to address a High Energy Line Break (HELB) operability question for the DGs. Operations performed the Post Maintenance Test (PMT) for this relay and returned the 2A DG to service at 1730 on August 15, 2011. The PMT initiated a trip on High D/P on the 2A DG Ventilation Fan. This trip creates a seal-in condition in the circuitry that must be reset by taking the fan's MCB switch to PTL in order for the fan to be started. However, the fan's MCB control switch was not taken to PTL after the PMT. Additionally, the active High D/P trip seal-in circuit logic, which has no local or remote indication, was not recognized by the Operating Crew following the PMT, nor was it identified as a consequence within the Modification Work Package or within the Post Maintenance Test work instruction steps.

The 2A DG was inoperable for the 2-day period when the supporting ventilation fan was not capable of auto starting. As a result, Technical Specification required actions for this past inoperability were missed. This condition resulted in a violation of TS 3.8.1, "AC Sources - Operating", Condition B, and is a reportable condition in accordance with 10 CFR 50.73 (a)(2)(i)(B) as any event or condition that was prohibited by Technical Specifications.

**C. Cause of Event**

The cause was that the Post Maintenance Test work instructions did not identify the need to reset the High D/P trip signal by placing the Ventilation Fan Control Switch in PTL and did not validate that the ventilation fan would restart after a High D/P Trip.

U.S. NUCLEAR REGULATORY COMMISSION  
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**CONTINUATION SHEET**

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**NARRATIVE**

Operations personnel inappropriately credited HELB analysis to justify past operability for the two days the 2A DG Ventilation Fan auto start was defeated. This assumption resulted in an LER for this issue not being submitted at the time of the event.

**D. Safety Significance**

There is reasonable expectation that the 2A DG was capable of performing its design function as discussed under the Updated Final Safety Analysis Report (UFSAR) without the fan auto start function being operable. UFSAR Section 8.3.1.1.2.2 states, "Short term unavailability of the diesel-generator room ventilation fans and dampers is bounded by the HELB analysis (See Subsection 9.4.5.2.1.3.e)". UFSAR 9.4.5.2.1.3.e provides the following Safety Evaluation: "Loss of diesel-generator room ventilation in the event of a HELB in the Turbine Building will not affect the safe shutdown capability of the unit for the short duration of the transient. These rooms are exposed to elevated temperatures until operator action is taken to restore room ventilation."

The 1A, 1B and 2B DG Ventilation Fans had previously been modified with this same time delay modification and these fans were verified to have their High D/P trip interlocks properly reset outside the PMT work instructions. Each of these DGs was operable and available to support Unit 2 operations for the entire period during which the auto start interlock was not operable on the 2A DG.

Reviews concluded there were no cross-train instances of equipment being inoperable that would constitute a loss of safety function during the period that the 2A DG was inoperable

Based the analyses above, the significance of this issue is considered low.

**E. Corrective Actions**

On August 17, 2011 Reactor Operators took the Main Control Board (MCB) control switch for the 2A DG ventilation fan to Pull-to-Lock (PTL) position and back to the After-Trip position and verified that the fan started.

Each Byron Station work group responsible for generating or reviewing PMT work instructions (Engineering, Operations, and Maintenance Work Planning) communicated and reinforced the need to ensure the as-left condition of components/systems being tested is proper to meet its design function.

Operations performed reviews of pending critical modifications to ensure that PMTs specified via work instructions provide sufficient guidance to test and properly restore systems or components to the correct as-found condition.

**F. Previous Occurrences**

There have been no previous occurrences of this nature in the previous three years.